

autumn 2003

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Software Engineering Degree Program Accepts Students

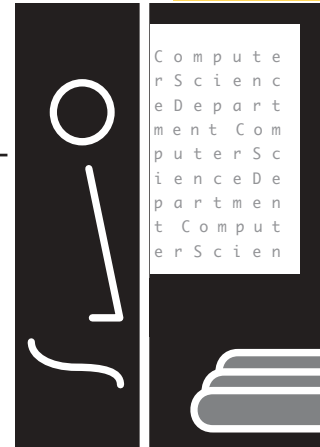
Cal Poly is one of a handful of universities in the U.S. and the first CSU campus to respond to the growing demand for software engineers by offering a B.S. in Software Engineering (SE). After three years in planning and development, the program was recently approved by the CSU Chancellor and will begin accepting students in Fall 2003.

The new degree responds to society's increasing dependence on computer software and the need for engineering practices that emphasize the development of reliable software.

Because the program emphasizes engineering methods, rigorous thinking and exposure to practical experience in software systems along with team leadership, the degree will provide the State of California with computer software professionals that can design, develop and deliver computer software systems that are on time, on budget and on target.

Administered by the Computer Science Department, the software engineering program is distinguished by an innovative use of teams whereby students not

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newsletter
of the
computer
science
department
cal poly san
luis obispo

Striving for Excellence: A Successful 2002-2003

A Message from Department Chair,
Tim Kearns



The Computer Science Department at Cal Poly has always been known for the excellence of its programs through the accomplishments of its students and alumni. The programs' excellent faculty, using hands-on, project-based learning, is a major factor in our students' success.

This past year has been very successful in improving our program. New faculty, Aaron Keen and Diana Keen, have joined the department. In addition, we have recruited three new faculty who will join us in Fall 2003. They will strengthen some of the department's core focus areas of hardware architecture, operating systems, and networking.

This fall, the department will begin offering a new Software Engineering program. This new degree responds to society's increasing dependence on large computer software systems and the need for engineering practices that emphasize the development of reliable software.

The new student fee, approved by the students, has enabled the department to offer more sections of

high demand courses, offer additional technical electives, and replace most of its servers and workstations.

The coming year will likely be difficult due to the California state budget. The department faces budget cuts of potentially 10%. To continue moving forward, we are looking to form stronger ties with industry and our alumni. I hope to work with many of you over the coming year to strengthen those bonds.



Professor John Hsu is congratulated by Cal Poly President Warren Baker on the publication of his latest book.

Recent Notable Accomplishments, Appointments and Awards of the Computer Science Faculty and Staff

Mei-Ling Liu

Promotion to Full Professor

Byron Smith

College of Engineering Outstanding
Staff Award

Erika Rogers

Director, University Honors
Program

Len Myers

Director, Computer Engineering
Program

Chris Buckalew

Teacher of the Year/ACM

Clint Staley

Teacher of the Year/ACM

John Hsu

Author: Computer Logic: Design
Principles and Applications

Diana Keen

Teacher of the Year/CPE

Phil Nico

Most Inspiring
Professor/CPE

Joe Grimes

Advisor of the Year/CPE

Mei-Ling Liu

Author: Distributed
Computing: Principles
and Applications

Keller History of Department Available On-Line



History Buffs – name this group from the Computer Science past, and come closest to the date of the photo. Prize – a signed copy of Keller's history of the department, plus, \$25 in Cal Poly merchandise from El Corral Bookstore.

Professor Elmo Keller has written a history of the Computer Science Department since its 1969 beginning out of the Mathematics Department at Cal Poly. Not only does he chronicle the happenings and people of the department, he puts it all in perspective by summarizing the computing developments of each decade.

The history spans much of the dynamic development of computing technology of the last part of the 20th century. Fortran, IBM, System 360, BASIC, Digital Equipment Corp., PDP-11 minicomputers, Hewlett-Packard, Apple, Microsoft, UNIX, C, event driven programming, C++, Java, Cisco, together with the Internet, all play a large part in this history.

Professor Keller is no stranger to writing history. He is the author of two books on his family history. He is a respected and admired operating systems teacher who many of you remember.

The history is available on-line at: <http://www.csc.calpoly.edu/about/history/> (This file is large and may take a while to download, depending on your connection speed.)

Anonymous Donor Continues Commitment to Computer Science

An anonymous donor continues to build a quasi-endowment for excellence in the computer science and software engineering programs. The donor's generous contributions have totaled \$150,000 to date and are earmarked to enhance instruction and research in the Computer Science Department.

The continued support to the department will significantly help us through these challenging times without sacrificing the quality of our programs. We look forward to putting it to use to sustain and cultivate the excellence our donor has recognized.

The quasi-endowment nature of the fund allows it to be invested to optimize yield while protecting principal and still maintain reasonable liquidity to allow the department to respond to unique opportunities.

SOFTWARE ENGINEERING, CONT.

only expand their engineering knowledge but also have the opportunity to develop their professional leadership skills, such as resource planning, allocation, tracking, team coordination and personnel handling.

A set of senior level courses that are

an integral part of the software engineering program includes software requirements engineering, software construction and software deployment. This year, Brocade sponsored a major project on storage systems management as part of the new series.

Software engineering capitalizes on the College of Engineering's 'project-based learning' paradigm and the strengths of the department. We anticipate that our future graduates will become industry leaders and the architects of advances in this important branch of computing.

Whatever Happened To ...?

One of the most frequent questions we are asked by alumni is what former faculty are doing and where they are. We contacted as many as we could find as we were approaching our deadline, and here is what they said. If you like this feature, we will continue it in future issues.

Curtis Gerald, the first chair of the Computer Science Department, recently celebrated his 88th birthday. Since his retirement in the early 80's, he has been living in the Salt Lake City area of Utah. Until recently, Curtis and his wife, Elsie, were active with home building through Habitat for Humanity. More recently, he has completed work on the seventh edition of his book, *Applied Numerical Analysis*. Pat Wheatley has been his co-author since the third edition.

Pat Wheatley is enjoying retirement in San Luis Obispo. His two dogs get him up a little before six every day. Pat still enjoys his three days at the local gym, and strongly recommends this for everyone in retirement. Finally, he has been a member of the choir at Mission San Luis Obispo, and found one of his very first students from the early 70s a member as well. He loves to hear about the alumni and is delighted to see them on his walks. Contact him at pwheatle@csc.calpoly.edu.



Neil Webre, Roger Camp and Zane Motteler at their 1992 retirement celebration.

Neil Webre lives in Cobbs Creek, Virginia, on the shore of the Chesapeake Bay. He is very involved with computerized futures trading, working with his son and a partner from New Zealand, with plenty of time out for sailing.

Zane Motteler is now retired from all gainful employment and Computing Accreditation Commission activities and lives with his wife Marilyn in Albuquerque, NM. Zane keeps busy engaging in his long-term hobby of genealogy, and also volunteers at a number of activities. He is editor of his neighborhood association newsletter; mans a cash register at the Friends of the Public Library used bookstore; and is secretary of the Worship Committee and is a lector and choir member at the John XXIII Catholic Community. Catch up with Zane at zmottel@csc.calpoly.edu.

Roger Camp writes: "Shirley and I are living in Lakeway, Texas, twenty miles west of Austin and on Lake

Travis. Still actively doing consulting, and enjoying good health and manage to get in a round or three of golf each month. We have 67 public golf courses and lots on entertainment venues nearby, ranging from Austin Symphony Orchestra to a recent Willie Nelson concert about a mile away." Get in touch with Roger at rogercamp@sbcglobal.net.

S. Ron Oliver writes: "We are still in Colorado, about an hour and a half West of Colorado Springs, near Guffey, where we moved six years ago. Still working on the Earthship with only 120 of 1500 tires left to pound, but now the work really begins. Both our children are attending Colorado State full time. I am the U.S. Representative for Top Graph'X. The major product line we are pushing now is a series of CORBA Middleware products. I mostly do technical presentations, tutorials, on-site training, and I am writing a book for them. Still climbing mountains." Visit with Ron at sroliver@csc.calpoly.edu.

Faculty News

Computer Architecture and Language Experts Join Faculty

Two recent University of California Davis graduates have just finished their first year on the Computer Science faculty and are strengthening course offerings in computer architecture and concurrent programming languages.

Diana Keen, Assistant Professor, Computer Science and Computer Engineering

Dissertation: Novel Designs and Uses of Communication in Auxiliary Processing Systems

Diana Keen has been interested in becoming a teacher since joining the tutoring homeroom in junior high school. Now she is enjoying first-hand the challenges of explaining computer science concepts, designing classes, developing curriculum and providing research opportunities as she teaches

undergraduate and graduate computer architecture courses at Cal Poly. She brings fresh insight and energy from her academic experience as an instructor at UC Davis, and professional experience at Compaq's VSSAD group in Massachusetts, and Lawrence Livermore National Labs in California.



Aaron Keen, Assistant Professor, Computer Science

Dissertation: Integrating Concurrency Constructs with Object-Oriented Programming Languages: A Case Study

Aaron Keen views research as an aid to teaching, not as a substitute. Quality teaching, including the development of interesting and realistic assignments, has been a key aspect of his first year at Cal Poly. His approach to the undergraduate and graduate programming languages courses has included tying theory to practice. He has taught and been a research assistant at UC Davis and University of Illinois, Urbana-



Champaign, and served internships at Hewlett Packard, Lawrence Livermore National Laboratory and Compaq Corporation.

In the faculty recruiting environment we faced for Fall 2002, the nationwide competition was fierce. We were very fortunate to hire not just one, but two individuals of the caliber of Aaron and Diana Keen. Not only are they energetic and highly qualified, their research interests were a perfect match for the teaching areas left uncovered by recent retirements.

You can read more about our new faculty at: www.csc.calpoly.edu/~akeen/ (Aaron Keen) and www.csc.calpoly.edu/~dkeen/ (Diana Keen)



Chuck Dana, Elmo Keller, John Hsu, John Connely and Ray Boche were honored for their contributions to the department at a June 2002 gathering. While officially retired, they have all elected to continue teaching part-time.

Alumni Updates

Editor's Note: The following alumni updates have been collected since our Spring 2002 issue. If your news has changed, please contact us for inclusion in our next issue.

Brad Dasko (MS CSC 1988) checked in from Boulder, Colorado, where he works for Avaya Inc. (telecommunications) as a lead automation engineer for test and test tools. He can be reached at bdasko@avaya.com. He reports that he has finally stopped having nightmares about getting class projects done on time and showing up late for final exams!

William Bray (BS CSC 1974) is President/CEO of Barrister Global Services Network, a public company that provides IT services throughout North America (see Barrister.com). Prior to joining Barrister, he held executive management positions at Hitachi Innovative Solutions Corp, NCR, Unisys, and COMDISCO, Inc.

John Pywtorak (BS CSC 1999) works is an analyst/programmer in Cal Poly's Office of Academic Records. He has a family, two children, and loves living in SLO.

Adrian Hick (BS CSC 1993) has three children (William Alice, Kaitlyn). His wife, Pamela Ryan-Hick (BS BIO 1993) completed dental hygiene school May 2002. He is working in Alaska with Computer Associates, and owns Gold Canyon Computers, a home business.

Peter Shepherd (MS CSC 1987) and Christine (Takata) Shepherd (MS CSC 1986) live in San Jose, CA. Peter works for Vitria Tech doing usability and management; Christine is in

charge of the Mac lab at their son's elementary school.

Cheryl James (MS CSC 1984) is a Systems Application Software Engineer for Xerox. With a work group based in Rochester, New York, Cheryl telecommutes from outside of Denver, Colorado, and is working on "print on demand" applications. She's glad to be traveling less than she used to since she has two horses, two dogs and a parakeet to take care of.

Dan Andresen (MS CSC 1992) earned his PhD and is now Assistant Professor of Computing and Information Sciences at Kansas State University.

Scott Peterson (BS CSC 1997) had his three-minute animation "Sprout" featured at the SIGGRAPH 2002 Electronic Theater in San Antonio, Texas. Scott works for PDI/Dreamworks in Palo Alto and is a



Brian Baer (BS CSC 1982) attended the Alumni Recognition luncheon at Poly Royal 2003.

regular visitor to Professor Buckalew's graphics seminar.

Jeff Reynolds (BS CSC 1988) is President and Founder of Video Action Sports in San Luis Obispo. They distribute 3,500 sport and fitness videos to 8,000 stores (see [Just PushPlay.com](http://JustPushPlay.com)).

Vicky Q. Somera (BS CSC 1990) is a software developer at Cisco Systems, working in the IOS Technology Division supporting and developing features in the file systems area.

Letitia Martinez (BS CSC 1988) is a project manager in the release group for the IOS operating system for Cisco Systems networking equipment.

Greg Taylor (BS CSC 2000) pursued his interest in the game industry and is working as a software engineer for Treyarch, in Santa Monica, where he helped write the PC version of the Spider-Man game. He reports that his Cal Poly education afforded him many more hands-on and practical experiences than were in the curricula of his co-workers' programs.

Dirk Hogan (MS CSC 2000) works for Hewlett-Packard in Santa Barbara on the Open View Storage Area Manager product. He telecommuted from Columbia, Missouri, for about two years.

Richard Muirhead (BS CSC 1986) works for Docent, a creator of web-based e-learning and knowledge exchange systems. He and his wife **Jodi (Rubenstein) Muirhead (BS CSC 1986)** live in Santa Clara with 9-year-old twins and a two-year-old daughter.

Continued back cover

Lab Renovation Begins to Take Shape

The sounds of progress are beginning to be heard as the computer science laboratory renovation project gets off the ground. The detailed design document for actual performance of the work is complete and the project is being implemented in stages. Major funding for the project comes from a \$1 million gift from **Paul R. Bonderson, Jr.** (BS EL/EE 1975). A gift from **Gary Bloom** (BS CSC 1982) was also used to help fund the architectural design.

Last year, the upstairs of the North wing of the Computer Science Building got an intermediate facelift with the removal of the old concrete locker pads and the construction of a storage room for lab needs. Individual and group study areas are on schedule for the new open space.

This summer, the entire wiring infrastructure of the building was upgraded to high speed Ethernet with gigabit backbone speeds. (No more yellow cable!) This was part of a larger project by the Information Technology Services (ITS) staff.

This summer or fall, the air conditioning is slated for replacement. This will have an immediate positive impact on the teaching environment in the laboratories, because the existing units have been an acoustical problem for many years. The AC concerns were high on the priority list for faculty and students using the laboratories on warm days.

The next step will be to revisit our goals and strategy for laboratory use

in light of a future renovation of the rest of Building 14. The second renovation will enable us to convert some classroom space into lab space. Combining the planning for both projects will allow us to make better use of the private donation which initiated the lab renovation plans. A faculty task force will meet in the fall to plan the best use of resources.

Computer Engineering (CPE) News:

By Len Myers

Last year was a banner year for the CPE program. After a very positive ABET accreditation review, the program ran smoothly through the awarding of 66 new diplomas. During the year, 23 CPE majors were inducted into the newly founded Honor society. To our knowledge this is the first honor society solely dedicated to Computer Engineering.

The new curriculum for 2003-05 includes the first set of classes offered uniquely to CPE majors, featuring 'pre-capstone' and 'capstone' courses that will provide students with a complete hardware-software system development experience.

With help from CPE student fees, both the CSC and EE departments made significant upgrades to labs used by CPE students. The fees also made it possible to hire a part-time Information Technology Consultant, Carol DiNolfo. CPE also has a new Administrative Assistant, Rhonda Walker.

At the annual "Hawaiian-style" banquet, the Engineering Student Council's Faculty Appreciation Award was given to outgoing CPE Director Art MacCarley. Len Myers (CSC) has been appointed Director for the next three years.

The program now has an Industrial Advisory Board dedicated completely to the CPE major. The board met in the spring and elected Steve Williams of Cisco Systems as President.

For more details on all of these topics, consult the CPE web page: www.cpe.calpoly.edu

US News Rates Cal Poly Best in its Class

For the tenth consecutive year, Cal Poly was rated the best public, largely undergraduate, university in the West by US News and World Report. In the "America's Best Colleges, 2003 Edition" rankings of individual undergraduate engineering programs at schools without Ph.D. programs, Cal Poly's computing programs were ranked third, behind two private institutions (Rose Hulman Institute and Rochester Institute of Technology). Cal Poly was the only public school listed in the top five.

The prestigious standing reflects the excellent academic reputation of our programs, the superior quality of our students, the success of our graduates, and enviable support from industry and friends. For more detail see www.usnews.com/usnews/edu/college/rankings/brief/engineering/nophd/enns05_brief.php

ALUMS, CONT.

Glen Goto (MS CSC 1984) teaches high school computer science at the Ranney School in Tinton Falls, NJ (www.ranney2school.com). Ranney is a college prep school whose graduates typically attend prestigious universities. Glen is trying to introduce them to Cal Poly!

Rom Yatziv (BS CSC 2002) has enrolled in graduate school at UCLA.

Kristine Rudkin (MS CSC 1995) has been at Yahoo since 1997, where she worked on a very early search engine, which fit in well with her Cal Poly thesis work.

Neel "Bubba" Murarka (BS CSC 2000) completed the San Diego Rock and Roll Marathon on June 1, 2003. The run raised money for the Leukemia and Lymphoma Cancer Society. Bubba is currently completing his MS CSC degree at Cal Poly.

Alumni Info Sought for Showcase and Updates

We have two requests this time. As always, we want to hear from you and find out what you are doing. Keep in touch with your fellow alumni by sending us your news for the **Alumni Updates** section in the next newsletter. Please include your name, degree and graduation year, and any news you want to share. Just send an email to estier@calpoly.edu.

In addition, we are looking for materials for an **alumni showcase**. We are looking for models of success for our students and evidence of the variety of careers available to our graduates. We welcome samples of projects and products, business cards, product packaging, imprinted products that show off your employer or company name, or anything else you think will make the point. Send materials to:

Ellen Stier
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Materials will be displayed in the Computer Science Department and will not be returned.

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